



(12) **United States Patent**
Ferran et al.

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(54) **AUTOMATIC CALIBRATION ADJUSTMENT OF CAPACITANCE DIAPHRAGM GAUGES TO COMPENSATE FOR ERRORS DUE TO CHANGES IN ATMOSPHERIC PRESSURE**

(58) **Field of Classification Search**
USPC 702/47, 50, 52, 98, 138, 189; 73/715, 73/718, 724
See application file for complete search history.

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(57) **ABSTRACT**

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G01L 7/08 (2006.01)

In order to mitigate the negative effects of a change in atmospheric pressure, an improved capacitance diaphragm gauge (CDG) sensor incorporates an independent ambient atmospheric pressure sensor near the CDG sensor body. The ambient atmospheric sensor is located outside the CDG sensor body to sense the ambient atmospheric pressure surrounding the CDG sensor body. The ambient atmospheric sensor provides an output that represents the ambient atmospheric pressure. A sensor output processing circuit receives the output of the ambient atmospheric sensor as well as the output of the CDG sensor. The processing circuit utilizes the output from the ambient atmospheric pressure sensor to fine tune the CDG measurement of pressure by executing an in situ, real time, automatic calibration adjustment of the CDG.

(52) **U.S. Cl.**
CPC **G01L 27/005** (2013.01)
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10 Claims, 5 Drawing Sheets

